

DNA Profiling Of Barley Grains – A Rapid Extraction, PCR Amplification And Detection.

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Abstract

A simple and rapid method of DNA extraction from half or whole barley seeds employing microwave treatment for 60 seconds has been developed. Suitably diluted (1:10 to 1:20) extracts were used in PCR with a conserved 5S ribosomal gene primer in conjunction with species-specific primers to amplify the non-coding spacer regions. Satisfactory amplification was achieved employing a Rapid Cycler™ and a Light Cycler™ in 21 and 23 minutes, respectively. This very rapid DNA extraction, PCR amplification and detection has combined to allow for the genotyping of barley grains in a total analysis time of less than one hour.

The cycling conditions and the influences of genomic DNA concentration on amplification were also examined to improve the efficiency and reproducibility of the technique.

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